group including Mach-Zehnder and electroabsorption modulators.

5.(original) The apparatus of claim 2 wherein said phase modulator is selected from a group including straight waveguides and slow wave waveguides.

6. (original) The apparatus of claim 2 further comprising:

(a) a plurality of cw lasers each connected to a phase modulator which is connected to an intensity modulator;

(b) an optical coupler connected to each intensity modulator; and

(c) an optical amplifier connected to said optical coupler.

7. (original) The apparatus of claim 6 further comprising more than two cw lasers in which the frequencies of said more than two cw lasers are different from one another; and the frequencies emitted by said more than two cw lasers are in a progression with substantially equal frequency spacing.

8. (original) The apparatus of claim 7 further comprising:

(a) four cw lasers;

(b) a phase modulator connected to each cw laser;

(c) an intensity modulator connected to each phase modulator;

(d) a four to one optical coupler connected to all four intensity modulators; and

(e) an optical amplifier connected to said four to one optical coupler.

9. (canceled)

10.(original) In a system for transmitting intensity modulated light waves over an optical fiber, a method of producing pulses of light which are compressed in temporal width by transmission over an optical fiber, the method comprising the steps of:

(a) inputting light from a cw laser which emits light at substantially a single frequency;

(b) connecting a phase modulator in series with said cw laser, wherein said phase

modulator causes the phase of the light from said cw laser to vary in substantially a quadratic manner as a function of time during a time interval T, such that the amplitude and temporal width T of said phase modulation can be adjusted; and

(c) connecting an intensity modulator in series with said phase modulator, wherein said intensity modulator is adjusted to transmit or block the light from said phase modulator in accordance with an intensity modulation scheme for transmitting binary data, such that said transmitted light consists of pulses of temporal width T during which the phase of the light varies in substantially a quadratic manner as a function of time, and the temporal width T can be adjusted.

11(currently amended). ~~In a system for transmitting intensity modulated light waves over an optical fiber, a method of producing pulses of light which are compressed in temporal width and multiplexed in time by transmission over an optical fiber, the method~~ The method of claim 10 further comprising the steps of:

(a) providing a plurality of cw lasers emitting at different, equally spaced optical frequencies, each connected to a phase modulator connected to an intensity modulator;

(b) connecting an optical coupler to the plurality of intensity modulators; and

(c) connecting an optical amplifier to the optical coupler.

12.(original) The method of claim 11 further comprising the steps of:

(a) inputting light from four cw lasers emitting at different, equally spaced optical frequencies;

(b) connecting a phase modulator to each of the four cw lasers;

(c) connecting an intensity modulator to each phase modulator;

(d) connecting a four to one optical coupler to all four intensity modulators; and

(e) connecting an optical amplifier to the four to one optical coupler.

13. (original) In a system for transmitting intensity modulated light waves over an optical

fiber, an optical data transmission apparatus, the apparatus comprising:

(a) a cw laser which emits light at substantially a single frequency;

(b) an intensity modulator connected in series with said cw laser, wherein said intensity modulator is adjusted to transmit or block the light from said cw laser in accordance with an intensity modulation scheme for transmitting binary data, such that said transmitted light consists of pulses of temporal width T; and

(c) a phase modulator connected in series with said intensity modulator, wherein said phase modulator causes the phase of the light from said intensity modulator to vary in substantially a quadratic manner as a function of time during a time interval T, said time interval T being said temporal width of said pulse from said intensity modulator.

14. (original) The apparatus of claim 13 wherein said phase modulator is conformed to adjust the amplitude of the phase change of the light, subject to the constraint that the phase of the light varies in substantially a quadratic manner as a function of time during said time interval T.

15.(original) The apparatus of claim 13 wherein said intensity modulator is selected from a group including Mach-Zehnder and electroabsorption modulators.

16. (original) The apparatus of claim 13 wherein said phase modulator is selected from a group including straight waveguides and slow wave waveguides.

17. (original) The apparatus of claim 13 further comprising:

(a) a plurality of N cw lasers each connected to an intensity modulator;

(b) an optical coupler connected to said plurality of N intensity modulators;

(c) a phase modulator which is connected to said optical coupler;

(d) an optical amplifier connected to said phase modulator.

18.(original) The apparatus of claim 17 in which the frequencies of said N cw lasers are different from one another; and, in the case that $N > 2$, the N frequencies emitted by

said cw lasers are in a progression with substantially equal frequency spacing.

19.(original) The apparatus of claim 17 further comprising:

(a) four cw lasers;

(b) an intensity modulator connected to each cw laser;

(c) a four to one optical coupler connected to all four intensity modulators;

(d) a phase modulator which is connected to said optical coupler; and

(e) an optical amplifier connected to said phase modulator.

20. (original) In a system for transmitting intensity modulated light waves over an optical fiber, a method of producing pulses of light which are compressed in temporal width by transmission over an optical fiber, the method comprising the steps of:

(a) inputting light from a cw laser which emits light at substantially a single frequency;

(b) connecting an intensity modulator in series with said cw laser, wherein said intensity modulator is adjusted to transmit or block the light from said cw laser in accordance with an intensity modulation scheme for transmitting binary data, such that said transmitted light consists of pulses of temporal width T; and

(c) connecting a phase modulator in series with said intensity modulator, wherein said phase modulator causes the phase of the light from said intensity modulator to vary in substantially a quadratic manner as a function of time during a time interval T, said time interval T being said temporal width of said pulse from said intensity modulator.

21.(currently amended) ~~In a system for transmitting intensity modulated light waves over an optical fiber, a method of producing pulses of light which are compressed in temporal width and multiplexed in time by transmission over an optical fiber, the method~~ The method of claim 20 further comprising the steps of:

(a) providing a plurality of N cw lasers emitting at different, equally spaced optical frequencies, each connected to an intensity modulator;

(b) connecting an optical coupler to the plurality of N intensity modulators;

(c) connecting a phase modulator to said optical coupler; and

(d) connecting an optical amplifier to the optical coupler.

22.(original) The method of claim 21 further comprising the steps of:

(a) inputting light from four cw lasers emitting at different, equally spaced optical frequencies;

(b) connecting an intensity modulator to each of the four cw lasers;

(c) connecting a four to one optical coupler to all four intensity modulators;

(d) connecting a phase modulator to said optical coupler; and

(e) connecting an optical amplifier to the four to one optical coupler.